

AMENDMENTS TO THE CLAIMS:

The listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (previous presented) A method of positioning a catheter proximate to a junction in a hollow anatomical structure of a patient, the method comprising the steps of:

introducing a catheter into the hollow anatomical structure;

identifying the junction in the hollow anatomical structure based on feedback from the catheter without imaging the hollow anatomical structure;

positioning the working end of the catheter proximate the junction identified in the step of identifying;

applying energy to the hollow anatomical structure at the treatment site via an energy application device at the working end of the catheter so as to lead to a reduced diameter for the hollow anatomical structure.

Claim 2. (original) The method of claim 1 wherein the junction in the step of identifying is the sapheno-femoral junction.

Claim 3. (original) The method of claim 1 wherein the feedback in the step of identifying is light emitted from a fiber optic device, and an attribute of the light changes upon reaching the junction of the hollow anatomical structure.

Claim 4. (previously presented) The method of claim 3 wherein the step of introducing the catheter further includes the step of introducing the catheter over the fiber optic device.

Claim 5. (original) The method of claim 3 further including the step of measuring the length of the fiber optic device introduced into the patient until the attribute of the light changes.

Claim 6. (original) The method of claim 5 further including the step of removing the fiber optic device after the step of measuring.

Claim 7. (original) The method of claim 5 wherein the step of positioning further includes the step of inserting the catheter for the same length as measured in the step of measuring the length of the fiber optic device.

Claim 8. (original) The method of claim 1 wherein the feedback in the step of identifying includes a magnetic field generated at the working end of the catheter.

Claim 9. (original) The method of claim 1 wherein the feedback in the step of identifying includes a magnetic field sensed by the catheter.

Claim 10. (original) The method of claim 1 wherein the step of introducing the catheter further includes the step of introducing the catheter over a guide wire; wherein the feedback in the step of identifying includes a magnetic field generated by the guide wire.

Claim 11. (original) The method of claim 1 wherein the step of introducing the catheter further includes the step of introducing the catheter over a guide wire; wherein the feedback in the step of identifying includes a magnetic field generated at the guide wire.

Claim 12. (original) The method of claim 1 wherein the feedback in the step of identifying includes a radio frequency signal generated at the catheter.

Claim 13. (original) The method of claim 1 wherein the feedback in the step of identifying includes a radio frequency signal sensed by the catheter.

Claim 14. (original) The method of claim 1 wherein the step of introducing the catheter further includes the step of introducing the catheter over a guide wire; wherein the feedback in the step of identifying includes a radio frequency signal generated by the guide wire.

Claim 15. (original) The method of claim 1 wherein the step of introducing the catheter further includes the step of introducing the catheter over a guide wire; wherein

the feedback in the step of identifying includes a radio frequency signal sensed by the guide wire.

Claim 16. (currently amended) The method of claim 1 wherein the source of the feedback in the step of identifying includes a hook shaped tip located at the distal end of a guide wire, wherein the guide wire traverses a lumen in the catheter, and the hook shaped tip is adaptable to be engage engages the junction of the hollow anatomical structure while the catheter travels over the guidewire to the junction.

Claim 17. (currently amended) The method of claim 1 wherein the source of the feedback in the step of identifying includes a hook shaped tip located at the working end of the catheter, and the hook shaped tip is adaptable to be engage engages the junction of the hollow anatomical structure while the catheter travels over the guidewire to the junction.

Claim 18. (original) The method of claim 1 wherein the source of the feedback in the step of identifying further includes impedance measurement.

Claim 19. (original) The method of claim 1 wherein the source of the feedback in the step of identifying includes an ultrasound signal generated at the working end of the catheter.

Claim 20. (original) The method of claim 1 wherein the source of the feedback in the step of identifying includes an ultrasound signal sensed by the catheter.

Claim 21. (original) The method of claim 1 wherein the step of introducing the catheter further includes the step of introducing the catheter over a guide wire; wherein the feedback in the step of identifying includes an ultrasound signal generated by the guide wire.

Claim 22. (original) The method of claim 1 wherein the step of introducing the catheter further includes the step of introducing the catheter over a guide wire; wherein the feedback in the step of identifying includes an ultrasound signal sensed by the guide wire.

Claim 23. (withdrawn) A method of positioning a catheter within a hollow anatomical structure, the method comprising the steps of:

introducing a fiber optic device into the hollow anatomical structure;

emitting light from the fiber optic device;

monitoring an attribute of the light emitted by the fiber optic device;

identifying the location within the hollow anatomical structure where the monitored attribute of the light emitted by the fiber optic device changes;

measuring the length of the fiber optic device introduced into the patient during the step of identifying;

introducing a catheter having a working end into the hollow anatomical structure;
positioning the working end of the catheter proximate the location identified in the step of identifying.

Claim 24. (withdrawn) The method of claim 23 wherein the location in the step of identifying is the sapheno-femoral junction.

Claim 25. (withdrawn) The method of claim 23 wherein the attribute of the light is no longer externally visible in the step of identifying.

Claim 26. (withdrawn) The method of claim 23 wherein the step of introducing the catheter further includes the step of introducing the catheter over the fiber optic device.

Claim 27. (withdrawn) The method of claim 23 further including the step of removing the fiber optic device after the step of measuring.

Claim 28. (withdrawn) The method of claim 23 wherein the step of positioning further includes the step of inserting the catheter for the same length as measured in the step of measuring the length of the fiber optic device.

Claim 29. (withdrawn) The method of claim 23 further comprising the step of applying energy to the hollow anatomical structure at the treatment site via an energy

application device at the working end of the catheter until the hollow anatomical structure durably assumes a smaller size.

Claim 30. (withdrawn) A method of positioning a catheter within a hollow anatomical structure, the method comprising the steps of:

introducing a catheter having a working end and a fiber optic device into the hollow anatomical structure;

emitting light from the fiber optic device;

positioning the working end of the catheter at a desired location within the hollow anatomical structure where an attribute of the light emitted by the fiber optic device changes.

Claim 31. (withdrawn) The method of claim 30 wherein the location in the step of positioning is the sapheno-femoral junction.

Claim 32. (withdrawn) The method of claim 30 wherein the step of introducing further includes the step of providing the fiber optic device through a central lumen in the catheter.

Claim 33. (withdrawn) The method of claim 32 further including the step of removing the fiber optic device through the central lumen of the catheter after the step of positioning.

Claim 34. (withdrawn) The method of claim 30 further comprising the step of applying energy to the hollow anatomical structure at the treatment site via an energy application device at the working end of the catheter until the hollow anatomical structure durably assumes a smaller size.

Claim 35. (previously presented) A method of positioning a catheter within a hollow anatomical structure, the method comprising the steps of:

determining a desired location within the hollow anatomical structure;

marking externally the desired location;

introducing a catheter having a working end and a transducer at the working end into the hollow anatomical structure;

identifying the location of the transducer at the working end of the catheter;

positioning the working end of the catheter at the desired location within the hollow anatomical structure such that the transducer is aligned with the external marking.

Claim 36. (original) The method of claim 35 wherein the location in the step of positioning is the sapheno-femoral junction.

Claim 37. (original) The method of claim 35 wherein the step of identifying further includes the step of placing a hand held device externally over the hollow

anatomical structure, wherein the hand held device identifies the location of the transducer at the working end of the catheter.

Claim 38. (original) The method of claim 35 further comprising the step of generating a magnetic field at the working end of the catheter to provide the transducer.

Claim 39. (original) The method of claim 35 further comprising the step of generating a radio frequency field at the working end of the catheter to provide the transducer.

Claim 40. (original) The method of claim 35 further comprising the step of generating an ultrasound signal at the working end of the catheter to provide the transducer.

Claim 41. (original) The method of claim 35 further comprising the step of applying energy to the hollow anatomical structure at the treatment site via an energy application device at the working end of the catheter until the hollow anatomical structure durably assumes a smaller size.

Claim 42. (withdrawn) A method of positioning a catheter within a hollow anatomical structure, the method comprising the steps of:

introducing a catheter having a working end with an energy application device at the working end into the hollow anatomical structure;

compressing the hollow anatomical structure at the treatment site to a compressed size;

detecting the flow rate through the hollow anatomical structure during the step of compressing;

positioning the working end of the catheter proximate a location within the hollow anatomical structure based on the change detected in the flow rate in the step of detecting.

Claim 43. (withdrawn) The method of claim 42 wherein the location in the step of positioning is the sapheno-femoral junction.

Claim 44. (withdrawn) The method of claim 42 wherein the step of detecting further includes the step of sensing the temperature decay with a temperature sensor located at the working end of the catheter as an anemometer.

Claim 45. (withdrawn) The method of claim 42 further comprising the step of applying energy to the hollow anatomical structure at the treatment site via an energy application device at the working end of the catheter until the hollow anatomical structure durably assumes a smaller size.

Claim 46. (withdrawn) The method of claim 42 further comprising the step of applying energy via an energy application device at the working end of the catheter for a short period of time sufficient to cause a measurable hearing effect; reducing the

application of energy; wherein the step of detecting the flow rate includes measuring the temperature decay after the step of ceasing the application of energy.

Claim 47. (withdrawn) The method of claim 42 further comprising the step of applying energy via an energy application device at the working end of the catheter sufficient to maintain a constant temperature; wherein the step of detecting the flow rate includes measuring the amount of energy required to maintain the constant temperature.

Claim 48. (withdrawn) The method of claim 42 further comprising the step of applying a constant amount of energy via an energy application device at the working end of the catheter to cause a measurable heating effect; wherein the step of detecting the flow rate includes measuring the temperature adjacent the catheter.

Claim 49. (withdrawn) The method of claim 42 further comprising the step of introducing a flow wire into the hollow anatomical structure.

Claim 50. (currently amended) A method of positioning a catheter within a hollow anatomical structure, the method comprising the steps of:

introducing a guide wire having a hook-shaped tip into the hollow anatomical structure;

hooking the hook-shaped tip of the guide wire to an [the] ostium of a junction within the hollow anatomical structure;

introducing a catheter having a working end into the hollow anatomical structure over the guide wire;

positioning the working end of the catheter proximate the junction identified in the step of hooking; and

applying energy to the hollow anatomical structure at the treatment site via an energy application device at the working end of the catheter to heat but not cut the hollow anatomical structure until the hollow anatomical structure durably assumes a smaller size such that the reduced diameter of the hollow anatomical structure effectively ligates the hollow anatomical structure.

Claim 51. (original) The method of claim 50 wherein the junction in the step of hooking is the sapheno-femoral junction.

Claim 52. (original) The method of claim 50 wherein the step of positioning further includes the step of stopping the advancement of the catheter by a mechanical stop located proximal to the hook shaped tip of the guide wire.

Claim 53. (original) The method of claim 50 further comprising the step of measuring the length of the guide wire introduced into the patient in the step of hooking.

Claim 54 - 69. (canceled).

Claim 70. (currently amended) The method of claim 1 wherein the step of applying energy heats but does not cut the hollow anatomical structure wherein the reduced diameter of the hollow anatomical structure results in occlusion of the hollow anatomical structure.

Claim 71. (previously presented) The method of claim 35 further comprising the step of applying energy to the hollow anatomical structure at the treatment site via an energy application device at the working end of the catheter so as to lead to a reduced diameter for the hollow anatomical structure and effectively ligate the hollow anatomical structure.

Claim 72. (previously presented) The method of claim 71 wherein the reduced diameter of the hollow anatomical structure results in occlusion of the hollow anatomical structure.

Claim 73-74 (cancelled)